SECTION OBJECTIVES

At the completion of this section, the supervisor will be able to:

- Define the mission of the National High Magnetic Field Laboratory (NHMFL) and how supervisors safety responsibilities impact the mission.
- Explain the objectives of the NHMFL Environmental, Health and Safety (EHS) Program.
- Describe the two organizations with EHS responsibilities at the NHMFL and the role of each organization.
- Identify the organization of the NHMFL and Florida State University (FSU) EHS Departments and who the key contacts are in each technical area.
- Describe the emergency contact process.

LABORATORY MISSION

The mission of the NHMFL is to become the preeminent user facility in the United States for magnet related research using some of the most powerful magnets ever assembled. The laboratory's high magnetic field research has and will continue to yield enormous benefits to society in areas of materials science, physics, engineering, biology, and chemistry.

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There are many factors that contribute to the achievement of the laboratory's mission, but none more important than safety. Magnet development, fabrication, research, and the supporting activities all present hazards which put each of us at risk of injury. Therefore, a functional, progressive, and effective EHS program is necessary for the achievement of the laboratory's mission.

SUPERVISORS AND THE NHMFL MISSION

The supervisor's role in achieving the NHMFL mission not only includes operational activities, but also EHS functions. The supervisor has a direct impact on how the EHS Program is implemented in his/her work area, and therefore, directly affects the mission of the laboratory.

Supervisor's safety responsibilities include:

- Implementation of the EHS Program in their work area.
- Enforcement of EHS Policies.
- Providing Job Safety Training to their staff.
- Ensuring staff, users, contractors, or maintenance personnel in their work area are following safe work practices.

Supervisor's responsibilities for health and safety can positively impact the mission of the laboratory by reducing the number and frequency of accidents, the number of lost-workday injuries, and worker's compensation claims. Their actions

can also safeguard NHMFL property and protect the environment.

EHS PROGRAM OBJECTIVES AND THE NHMFL MISSION

The laboratory has established several objectives for the EHS Program which support the mission of the NHMFL. Those objectives are:

- Inform staff, users, and visitors of the hazards present at the laboratory and appropriate protective measures.
- Provide training necessary for personnel to safely perform their work functions.
- Reduce the risk of injury or property damage through the implementation of accident prevention techniques.
- Provide on the job instruction to student employees and volunteers, and graduate student researchers on how to work safely in a laboratory environment.

The laboratory EHS program objectives can help to achieve the laboratory mission in the following ways:

- An effective EHS Program providing a safe workplace will provide a better environment for users, researchers, and prospective employees to the laboratory.
- Organizations and agencies which provide support and funding require reviewing safety programs and their effectiveness when considering a facility for funding.

N O T E S :

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- Employee productivity and moral will generally be higher when an effective EHS Program is in place.
- Accidents, injuries, and property damage cost money. By implementing an accident prevention program as part of the EHS Program, the laboratory can reduce the costs associated with accidents and have additional funds for facility upgrades and additional research.

ORGANIZATION/RESPONSIBILITIES

Two organizations have joint responsibility for implementing the EHS Program at the NHMFL. The FSU Department of Environmental Health and Safety has responsibility for the campus wide development and implementation of EHS programs.

The NHMFL Safety Department is responsible for the implementation of both FSU safety policies, and the development and implementation of the NHMFL EHS Program.

FSU and the NHMFL are expected to work together to meet the EHS objectives of the laboratory. Both organizations have technical resources which can be drawn upon by the other to resolve EHS issues.

KEY PERSONNEL

In many instances, a supervisor at the NHMFL may require technical assistance from an EHS professional to resolve an issue. Knowing who to contact ensures that the issue will be addressed

quickly. Supervisors should contact NHMFL staff before attempting to contact FSU staff.

Tables 1-1 and 1-2 provide the contacts at FSU and the NHMFL for various technical areas.

TABLE 1-1
TECHNICAL CONTACTS AT THE NHMFL

TECHNICAL AREA	TELEPHONE #
Health, Safety, & Security	(904) 644-0233 (W)
Hazardous Materials	(904) 644-6955 (W)

TABLE 1-2
TECHNICAL CONTACTS AT THE FSU

TECHNICAL AREA	OFFICE TELEPHONE #
Hazardous Materials	(904)644-7682
Biological Safety	(904)644-5374
Industrial Hygiene	(904)644-8177
Fire Safety	(904)644-6535
Radiation Safety	(904)644-8801
General Insurance	(904)644-7684
General Insurance	(904)644-7683

EMERGENCY CONTACTS

Employees look to their supervisors for leadership, and in the event of an emergency, supervisors will generally take the lead in making emergency contacts. In the event of an injury requiring an ambulance, or an accident requiring fire or police response, supervisors should make the following calls:

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1. Call 9-911 and inform the dispatcher of your location and the nature of your emergency.

2. Call the FSU Campus Police at (904) 644-1234. Inform them of your location and the nature of your emergency.

3. Call the Safety Coordinator or Hazardous Materials Manager of the NHMFL Safety Department at the telephone numbers listed in Table 1-1. If there is no answer, you can page them at the following telephone numbers:

Safety Coordinator	657-8278
Hazardous Materials Manager	657-8279

If the emergency does not require the assistance of police, fire, or ambulance, contact the Safety Coordinator or Hazardous Materials Manager directly.

SECTION OBJECTIVES

At the completion of this section, the supervisor should be able to:

- Explain the importance of a supervisor's safety awareness with respect to influencing safety in their work area, setting a good example, compliance with governmental regulations, and personal liability for accidents and injuries.
- Identify the impact of accidents, injuries, and property damage on the staff and operations of the NHMFL.
- Evaluate how the financial impact of an accident or injury is determined, including direct and hidden costs.
- Identify the supervisor's safety responsibilities at the NHMFL and list the 3 steps used by OSHA to protect workers.
- Discuss how the staff and laboratory operations benefit from supervisors who choose to positively impact safety in their areas.
- Identify how safety performance will be evaluated.

SAFETY AWARENESS

The NHMFL has many chemical and physical hazards that have the potential to cause serious injury or death, and significant property damage.

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Table 2-1 summarizes the most common hazards in each work area.

Each employee, user, or student working at the NHMFL receives training on how to recognize and avoid these hazards. Even though training is provided, accidents still occur.

TABLE 2-1
MOST COMMON HAZARDS AT THE NHMFL BY WORK AREA

OP/MD and Millikelvin Area	"A" Wing	"B" Wing	"C" Wing	NMR
Confined spaces Machine shop Cryogens Cranes Forklifts Welding Noise Housekeeping Electrical Lasers	Cryogens Gas cylinders Machines Electrical Chemicals Confined spaces	Chemical lab hazards Magnets Lasers Chemical	Chemical lab hazards Radiation Lasers Furnaces Chemicals X-rays	Magnets Cryogens Electrical

Every supervisor is aware that accidents can and do occur in their workplace. Unfortunately, most supervisors are not aware of how they can positively influence safety from their position as a supervisor to prevent accidents.

Supervisors must be aware that they are the ones who set an example for their personnel to follow. If the example does not follow the laboratory's safety policies and generally accepted safe work practices, then it is unreasonable to expect that the associates will work safely.

One of the problems unique to the NHMFL is the frequent turnover of student workers, users, and other temporary employees or volunteers. The NHMFL has many magnet cell users coming through the facility each year. These people may be on-site from a matter of days to a few months. It is imperative that they receive adequate safety and job training, and familiarize themselves with the operations in their work area. Supervisors

should be acutely aware of this issue and make an effort to closely monitor the activities of these short term workers.

Awareness of and compliance with federal, state, and local EHS laws is critical to the uninterrupted operation of the NHMFL. Inspections by regulatory agencies interrupt the work schedules of everyone involved. Violations identified during inspections can delay work activities and result in monetary penalties.

Compliance with state, federal, and local EHS regulations as they apply to your work area is also the responsibility of the supervisor. The Safety department can provide the technical assistance you may need to comply with these regulations. Figure 2-1 shows the Occupational Safety and Health Administration's (OSHA) most frequently cited regulations for 1993. OSHA has also been increasing the dollar value of their fines. Table 2-2 summarizes the dollar value of OSHA penalties assessed between 1982 and 1994.

TABLE 2-2
DOLLAR VALUE OF OSHA PENALTIES ASSESSED

Year	$ Million
1982	4.3
1983	4.8
1984	6.1
1985	7.8
1986	11.4
1987	24.5
1988	45.0
1989	57.5
1990	66.6
1991	91.7
1992	116.1
1993	96.6
1994	119.9

NOTES:

SECTION OBJECTIVES

At the completion of this section, the supervisor should be able to:

- Provide the definitions for an accident and a near-miss.
- List the causes of accidents.
- Explain how to prevent and control accidents.
- Complete a Job Safety Analysis.

WHAT ARE ACCIDENTS?

An "accident" is an unplanned, undesired event which may or may not result in injury or property damage, that interferes with the completion of an assigned task.

A "near miss" is a form of an accident that does not result in injury or property damage.

ACCIDENT CAUSES

Many people believe that "accidents happen". They believe that the occurrence of an accident is inevitable and cannot be avoided. Some say "it was just bad luck" or "they were in the wrong place at the wrong time". All of these excuses fail to identify the true causes of accidents.

One researcher found that for every serious or disabling injury, there are:

10 minor injuries
30 property damage incidents
600 near-miss accidents

NOTES:

Figure 3-1 shows the upward trend in lost workdays due to workplace injuries.

FIGURE 3-1

While much effort and time is expended on accident investigation, this information tells us that we should be focusing on accident prevention. The majority of accidents are near-miss and may never be reported.

The causes of accidents can be broken down into two basic components, unsafe conditions and unsafe acts.

Unsafe conditions are hazardous conditions or circumstances that could lead directly to an accident.

An unsafe act occurs when a worker ignores or is not aware of a standard operating procedure or safe work practice designed to protect the worker and prevent accidents. The following is an example of an unsafe act.

> **A worker needs a electrical switch rewired. A work request is submitted and the work scheduled for the following week. The employee decides, I need this sooner and tries to rewire the switch. The employee receives an electrical shock after failing to lock out the energy source.**

This example illustrates how an employee may cut corners and commit an unsafe act.

Table 3-1 provides a summary of the most common unsafe acts and conditions.

NOTES:

N O T E S :

TABLE 3-1
SUMMARY OF UNSAFE ACTS AND CONDITIONS

Unsafe Acts	Unsafe Conditions
Operating equipment or machinery without permission.	Lack of guarding on machinery.
Defeating safety devices.	Defective tools or equipment.
Using defective equipment.	Crowding of workers into one area.
Using the wrong tool for the job.	Inadequate emergency alarm systems.
Not using the prescribed personal protective equipment.	Fires and explosions.
Incorrect lifting technique.	Poor housekeeping.
Working while intoxicated.	Hazardous atmospheres.
Horseplay.	Excessive noise.
	Excessive radiation exposure.
	Inadequate lighting.

As we saw in Figure 3-1, not all unsafe acts or conditions will result in an accident, but may result in a near-miss or nothing at all.

All the examples of unsafe acts and conditions given in Table 3-1 are the result of personal or job factors. Personal and job factors are the root causes of accidents. Table 3-2 shows the personal and job factors which can lead to a unsafe act or condition.

TABLE 3-2
PERSONAL AND JOB FACTORS

Personal Factors	Job Factors
Lack of knowledge or skills due to inadequate training.	Non-existent or poorly developed work standards.
Improper motivation.	Substandard equipment design.
Physical limitations of the worker.	Poor equipment maintenance.
Distractions which interfere with the worker's ability to concentrate on their job.	Purchase of substandard equipment, tools, and materials.
	Unusual increases in equipment usage.

The personal factors described in Table 3-2 generally lead to unsafe acts and the job factors are likely to contribute to the unsafe conditions. If you can identify the personal and job factors which may contribute to an accident in your work area, you have taken the first step toward the prevention of accidents.

NOTES:

N O T E S :

ACCIDENT PREVENTION

Accident prevention involves the identification and elimination of causes before an accident occurs. Accident reaction is what most supervisors practice, that is, investigating the accident to determine the causes and then implementing corrective actions to avoid reoccurrence. This helps eliminate future accidents from a specific cause, but does nothing to address avoiding the accident that just occurred.

One method of accident prevention that can be used by the supervisor is the job safety analysis (JSA). A JSA takes a specific job (for example, winding magnets) and identifies the following:

1. Sequence of basic job steps.

2. Potential hazards at each step.

3. Recommended action or procedure to correct the potential hazards.

JSAs are most thorough when conducted by the supervisor and a worker skilled at the job. This also provides the worker with a sense of involvement and control over how their assignments are completed. Prioritize the selection of jobs for JSA. Jobs which have the most accidents, including injuries, property damage, and near misses, should receive the highest priority. Jobs with the potential for severe injury or property damage should be targeted next. Finally, be sure to conduct JSAs on newly created jobs. An example of a JSA can be found in Attachment A.

Planned Job Observations (PJO) provide the supervisor with an opportunity to validate the JSA.

A PJO is a procedure used by supervisors to determine if a worker is completing a job with maximum efficiency and quality. While many supervisors informally observe work on a daily basis, interruptions, distractions, and a lack of planning prevent the supervisor from gathering the information necessary to properly evaluate the worker's performance. The PJO is performed by following these steps:

1. Worker and Job Selection

   Workers should be selected for PJO based on the following priority:

   - New Workers
   - Poor Performers
   - Risk Takers
   - Good Performers

   Selecting jobs for PJO should focus on jobs with an accident history, jobs with the potential for serious injury or significant property damage, and jobs with a high probability of occurrence.

2. Preparation

   The supervisor must make a commitment to be prepared for the PJO. The supervisor should review the JSA and other work procedures for that specific job.

NOTES:

N O T E S :

3. Job Observation

When observing the worker, the guidelines listed below should be followed:

- Stay out of the way!
- Do not distract the worker.
- Do not interrupt the worker.
- Do not allow others to interrupt your observation of the worker.
- Have a copy of the JSA with you to follow the job process step by step.

4. Employee Review

Review your observations with the employee as soon as practical after the PJO.

5. Follow-Up

Follow-up includes making changes to procedures or JSAs as appropriate to your observation, retraining on job performance, or additional training not previously provided. Ensure that you follow-up with the worker or the value of the PJO will be lost.

ACCIDENT CONTROL

In the event that an accident does occur, Supervisors will be instrumental in the control of the accident. Accident control can be broken down into three phases:

1. Accident response
2. Accident investigation
3. Corrective actions

Accident Response

As a supervisor who witnesses an accident, your first priority is to safeguard workers, visitors, and yourself. Evacuate personnel to a safe area and tend to injured personnel immediately. Initiate the appropriate level of response for the accident. Secure the accident scene as soon as safely possible. This ensures that unauthorized personnel will not wonder into the accident scene and possibly be injured or exposed.

Control of property damage can be addressed after attending to personnel issues and initiating the emergency response system.

Whenever possible, supervisors should attempt to preserve evidence associated with the accident. This can be critical to determining the cause of an accident. It is best to prevent unauthorized personnel from entering the accident scene and disturbing the evidence. The evidence can be collected once the investigation team has been assembled and the investigation begun.

Accident Investigation

The investigation of an accident involves more than just completing a form. While forms are necessary for the documentation of the accident, supervisors should consider taking photographs or videotape of the accident scene. This level of documentation will be helpful at a later date when discussing the accident and can be used for training purposes.

Supervisors should begin interviewing witnesses as soon as practical after the accident. It is best to interview witnesses alone and while the accident is still fresh in their mind. Here are some suggestions concerning interviewing.

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- Create a relaxed atmosphere with the interviewee. Try to put them at ease.
- Interview at the accident scene when possible. This will allow the interviewee to point to various areas or equipment at the accident scene to illustrate what they are trying to communicate.
- Interview each witness separately. This prevents witnesses from being swayed or intimidated by other workers. Each witnesses account of the accident can then be compared objectively to try to develop an accurate description of the accident.
- Getting the witnesses objective account is critical. Avoid biasing the witness by leading them to a conclusion with your questions or by making judgmental remarks.
- Restate the witness' account of the accident back to them when they are finished. This will identify any communication breakdowns during the interview and ensure that the interviewer is gathering an accurate account of the witness' statement.
- End the interview in a positive manner and let the witness know how important their participation in the accident investigation is to the prevention of future accidents. Let the witness know that it is appropriate to contact you at a

later date if they remember any additional information relevant to the accident.

One tool commonly used in accident investigations is to reenact the accident. This can provide insight as to the conditions faced by personnel during the accidents and what options were available for response. The reenactment must be done under strict controls to ensure that no one is injured during the reenactment.

Documentation of the accident, including it's causes and corrective actions is critical. At the NHMFL, supervisors are required to complete Form DWC-1 First Report of Injury or Illness and Form WC-3 Supervisor's Accident Investigation Report within two work days following any work-related accident involving a staff member, user, or student. Accident reports must be completed promptly and with sufficient detail to ensure a complete understanding of what caused the accident and how reoccurrence of the accident can be prevented. The following paragraph summarizes a hypothetical accident scenario. The following pages are examples of a poorly completed Supervisor's Accident Investigation Form, an acceptable quality form, and a final accident report completed by the NHMFL Safety Department.

Accident Scenario

A machine shop employee was trimming a one-half inch wide by 3 inch long strip from a G-10 epoxy board using a bandsaw. The employee was wearing leather gloves and attempted to push the cut strip out of the blade area with his gloved finger. The glove was caught in the blade, pulling the worker's hand into the cutting edge of the blade. The worker suffered a 3 inch cut to the back of the right hand. The worker was wearing safety glasses at the time of the accident.

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FIGURE 3-2

INADEQUATELY COMPLETED SUPERVISORS ACCIDENT INVESTIGATION REPORT

FIGURE 3-3

ACCEPTABLE SUPERVISOR'S ACCIDENT INVESTIGATION REPORT

FIGURE 3-4

FINAL ACCIDENT REPORT

N O T E S :

Supervisors may be requested to complete the Medical Authorization for Work Accidents, Form WC-2 for employees with minor injuries. Part 1 of this form is completed by the supervisor and gives a brief description of the accident and injury. The employee takes the form with them to the University Health Center or one of the approved walk-in emergency treatment centers. The medical treatment personnel complete Part 2 of the form describing the medical findings and any work restrictions. The injured employee returns the form to their supervisor who attaches the form to the First Report of Injury or Illness Form.

Copies of accident, injury and medical forms are found in Attachment B.

Corrective Actions

Corrective actions are actions taken to prevent the reoccurrence of an accident. Corrective actions can be identified after the root cause(s) of the accident have been identified. Corrective actions should be included on the accident investigation report.

Corrective actions need to:

- Address the causes of the accident.
- Prevent those causes from reoccurring.
- Be achievable with the available resources.
- Be readily implemented without disrupting production.

Examples of Corrective Actions

Install engineering controls
Upgrade equipment
Develop written safe work procedures
Perform a JSA
Order proper PPE

- Be understood by the management and staff.

Once corrective actions have been implemented, the work area supervisor must monitor and evaluate their effectiveness with regard to eliminating the causes of the accident. Failure to evaluate the corrective actions could result in the reoccurrence of the accident.

JOB SAFETY ANALYSIS EXERCISE

Many supervisors have never completed a JSA. This is an opportunity for you to complete a JSA and discuss your findings with your instructor and fellow supervisors.

Your instructor will show you a brief video tape of a worker performing a job at the NHMFL. Make notes concerning the steps followed to complete the job, potential hazards, and control measures necessary to safely complete the job. Then fill out the JSA form supplied by your instructor.

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SECTION OBJECTIVES

At the completion of this section, the supervisor should be able to:

- Recognize the impact of communications on the EHS Program.
- Describe the barriers common to communications.
- Give examples of how to improve communications with staff, users, students, maintenance, and contractors to improve accident prevention.

COMMUNICATIONS IMPACT ON EHS

Communication is a key component of any EHS Program. Without quality communication, training, accident investigations, JSAs, etc. will provide little benefit to the laboratory.

For a supervisor to succeed with the EHS Program, they must spend just as much time listening as they do speaking. Communication involves more than just speaking and listening, understanding is the critical component to determining if the communication is successful.

COMMUNICATION BARRIERS

Supervisors should be aware that there are filters which communications travel through on their way to the receiving person. The filters may interfere

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Did you know supervisors spend about 70% of their workday communicating.

9% Writing
16% Reading
30% Speaking
45% Listening

NOTES:

with the message being transmitted or be so severe as to interrupt the communications entirely. Examples of filters include:

- Knowledge of the subject being communicated.
- Biases of the communicator and receiver.
- Attitudes or mindset at the time of communication.

If the person sending the communication does not know the level of knowledge of the receiving person, the communication may be to complex to understand or to simple to be effective. A supervisor who understands a worker's knowledge of a given topic will be able to tailor their communication to ensure full effectiveness.

Biases can impact communications by causing one or both of the parties to not be fully open to receiving the communication. An example could be a worker who says "I've been on this job for 20 years and no new supervisor with less experience is going to tell me how to do my job". The worker has developed a bias based on experience and may not listen to newer ideas that are to their benefit.

A persons attitude or mindset at the time of the communication can also effect the success of the communication. Distractions at the worksite or at home can interfere with communications. Imagine trying to give a worker detailed instructions when they are thinking:

- Is there going to be layoffs? Will I be included?

- Will our medical benefits be cut?
- Will my new supervisor or coworkers like me?
- Is this a safe place to work?

If you think that the worker may be distracted, ask them to repeat the instructions or communication back to you. If they can repeat the message, ask additional questions to determine if they understand the message. This is the only way to ensure successful communication when you are competing for your worker's attention. Imagine starting your next safety meeting or training session with the statement "before we start, I'd like to talk about the companies plans for staff reductions". This sets a poor atmosphere for learning and attention to things other than staff reductions. Also keep in mind that your environment effects communication. Loud noises and high personnel traffic areas will tend to be distractions.

COMMUNICATING EHS WITH YOUR STAFF

Communicating EHS to your staff should occur on a daily basis. Announcements, new procedures, etc. should be discussed with employees at as soon as they are received. During your daily walk through the work area, identify unsafe conditions and acts, and ask staff working in the area to correct the problems. Counsel employees not wearing the appropriate personal protective equipment. You can use non-verbal communication by always wearing the appropriate personal protective equipment yourself, and following safe work practices at all times.

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Each Supervisor should include a discussion of EHS issues in their weekly staff meetings. The content of the safety discussion should be at the discretion of the supervisor, although suggested material would include the safety committee minutes, incident reports, magazine and newspaper articles related to safety and changes in processes, methods or operations.

COMMUNICATIONS WITH USERS AND STUDENTS

Users of the NHMFL facilities are supervised by the laboratory's Principal Investigators (PI). The PI is responsible for ensuring that the user's experiment is designed safely. The PI must communicate this requirement to the user during the proposal review process.

Although you may not directly supervise a user, a user may work in your area at some point. In communicating EHS concerns to the user, it is important to remember that users are only on-site for a short period of time and may not be familiar with laboratory procedures and hazards. Users will view the NHMFL Safety Orientation Video and receive a brief safety orientation prior to starting their experiments. Users will not receive the same level of EHS training that permanent staff receive. Users will need your assistance with safe work procedures and personal protective equipment requirements in your area. It is important to take the time to guide the users through their work to ensure everyone's safety.

Students at the NHMFL represent a valuable resource for the future of science. It is important for them to develop safety work practices while at the laboratory which can be carried with them to their

future jobs in industry and research. Be sure to communicate the safety concerns to students in your work area and your expectations concerning following safe work practices. Supervisors should take the role of a safety mentor for the students in their work area, providing them with guidance on safety issues as necessary.

COMMUNICATIONS WITH MAINTENANCE AND CONTRACTORS

Supervisors at the laboratory may find it necessary to contact maintenance to assist with correcting safety issues. It is important to ensure that you assign the appropriate priority to your safety need. If it is not an emergency or a safety issue that is an immediate hazard, provide maintenance with reasonable time to schedule the work. If the issue is a high priority, definitely let them know.

All maintenance work requests must go through the Administration and Facilities Department. This department is responsible for the scheduling and completion of the work, including work that requires FSU maintenance staff. Do not contact the FSU Maintenance Department directly. The reason all maintenance work goes through the laboratory's facilities office is to ensure that NHMFL staff are aware of all maintenance activities occurring at the site and ensure that the appropriate safety measures for the work are implemented.

Contractor activities must be managed closely to ensure that EHS Program requirements are met. The facilities department will prequalify the contractor by reviewing their safety record and programs. Contractors with a poor safety record or

N O T E S:

Maintenance Assistance

Mounting Fire Extinguishers
Repairing Ventilation Hoods
Leaking Pipes and Values
Electrical Repairs
Air-Conditioning Concerns

NOTES:

no safety programs should not be awarded contracts for work at the NHMFL. These contractors put laboratory personnel at risk as well as themselves.

Contractors are required to sign in at the front desk and at the facilities department prior to beginning work. The maintenance department will be responsible for notifying supervisors in areas to be affected by contractor activities. The work area supervisor is responsible for communicating information concerning health and safety issues in their work area. Supervisors should also observe contractors for unsafe conditions or acts and notify facilities for an appropriate response.

Contractors will receive a basic safety orientation to laboratory activities and the potential hazards. Supervisors should advise contractors in their work area of specific hazards, protective measures, and emergency procedures.

SECTION OBJECTIVES

At the completion of this section, the supervisor should be able to:

- Identify the benefits of safety committees to the organization and individuals.
- Describe the four major guidelines to follow when developing a department safety meeting.
- Describe two other ways to promote the EHS to their workers.

SAFETY COMMITTEES

There are several ways motivate employees to work safely and participate in the EHS Program.

Involving workers in safety committees is a positive way of maintaining and promoting safety. One way to increase the number of participants is to use revolving memberships. Workers who participate in the committee should be recognized for their efforts. Time should be allocated for the worker to participate in the committee. The mission of the committee must be understood by all members.

Members of the safety committee must be given specific instructions for their assignments and dates for completion.

Committee matters should be focused on EHS issues. The committee should not become side tracked by non-EHS issues.

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Written minutes should be taken and promptly typed into an announcement to be posted throughout the laboratory.

The NHMFL Safety Committee meets monthly. More frequent meetings can be scheduled as needed.

A committee meeting will generally follow standard meeting protocols.

- Review the previous meeting minutes and vote on acceptance.
- Discuss "old" (unfinished) business identified in previous meetings.
- Discuss "new" business. This may include reviewing accident reports, near misses, work area inspection reports, and the status of member or subcommittee assignments.
- Identify and assign action items to be completed before the next meeting.

Supervisors must recognize that although a committee and Safety Department exist, they are still responsible for safety in their work area.

DEPARTMENT SAFETY MEETINGS

Department or work area safety meetings are a good method of communicating with workers about safety. The meetings provide an opportunity for the supervisor or staff to present a safety topic that is specific to the operations in their work area. These meetings involve smaller

groups of people and people are more likely to participate in the discussions.

When developing your safety meetings, use the following guidelines:

- Develop and distribute a written agenda. Workers prefer to know what the meeting is about and why they are there.

- The subject or topic for the meeting should include two or three key points that the workers should take with them. Don't overload the workers with an avalanche of information.

- The meetings should be short, but frequent. You will find that the longer the meeting, the less is retained. Workers tend to start thinking about the work that they need to complete or what they have planned for after work. Holding several brief safety meetings throughout the week will positively reinforce the concept of safety being part of your job everyday.

- The location of the meeting is critical. Will people stand or sit? Will it be quiet or noisy? Will it be too hot or too cold? Will it be to crowded? Select a comfortable area for the meeting.

N O T E S :

Note: Work area safety meetings should only be about 15 minutes in length and never greater than 30 minutes.

Note: Monitor the temperature of the meeting room closely. If workers have been in high heat conditions, don't use a meeting room that has the air-conditioning running full power. A significant change in temperature can be uncomfortable.

N O T E S :

Off-Site Safety Issues

Defensive Driving
Boating Safety
Electrical Hazards
Falls
Fire Safety
Tool Safety
Lifting Techniques
Sports Injuries
Poisoning
Heat Hazards

OTHER SUGGESTIONS FOR PROMOTING SAFETY

Recognition is one of the most important ways that a worker measures job satisfaction. Recognizing workers with exemplary safety records is a source of positive reinforcement. Recognition should be made in the presence of their peers to have an impact on the entire department.

Involve workers in safety activities such as work area inspections and training. By involving workers in inspections, they become familiar with EHS requirements and have a stake in creating a safe workplace.

Safety suggestion boxes are another way to involve workers in the EHS Program. If a worker wants to draw attention to a safety concern and remain anonymous, a suggestion box is an appropriate method for notifying management. Safety suggestions that help to prevent accidents, injuries, or property damage, and therefore save money, should be rewarded.

Supervisors should consider the impact of off-the-job accidents on their people and operations. You might ask "Why?". In terms of production or getting the job done, it does not matter if the person is injured on or off-the-job. You have still lost their services and skills for a period of time or indefinitely. Discussing topics that address off-the-job injuries should be part of your regular department or work area safety meetings. If you need ideas, just look in your local newspaper. You will find articles describing various incidents resulting in injuries or property damage.

New supervisors should be involved in safety mentoring program at the laboratory. This would involve a supervisor with an active interest in safety working with the new supervisor to implement the EHS Program. They should meet on a regular basis to discuss safety issues and how they are being addressed, and provide direction and guidance as appropriate.

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SECTION OBJECTIVES

At the completion of this section, the supervisor should be able to:

- Explain the difference between General Safety Training and Job Safety Training.
- Know how to prepare to conduct Job Safety Training.
- Describe the benefits of Job Safety Training.

GENERAL SAFETY TRAINING VERSUS JOB SAFETY TRAINING

There are two basic types of safety training conducted at the NHMFL. The first type, General Safety Training, includes training required by regulations, standards, or good management practices. This training includes topics such as electrical safety, materials handling, cryogens, confined space entry, lockout/tagout, lasers, radiation, etc. This training is developed and presented by the NHMFL Safety Department. While every person working at the NHMFL will be required to attend a basic safety orientation training class, attendance at subject-specific training courses must be determined by the supervisor. Supervisors must be able to recognize which general safety training courses are required for their staff. The supervisor must also be familiar with the retraining requirements of the standards to ensure compliance with training requirements.

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JOB SAFETY TRAINING

Job Safety Training is a method for teaching workers about the hazards associated with a specific job, task, or operation. This is done by reviewing each step of the process and identifying the hazards present in that step. This process is known as a Job Safety Analysis (JSA) which is described in Section 3. JSAs provide an excellent tool for supervisors to use when providing on-the-job training and job safety training. Supervisors should adequately prepare for Job Safety Training to ensure that the quality of the training is high and the benefit to the worker is great. When preparing, consider the following:

- Does the worker have any prior experience performing the job? Their experience level will allow you to adjust the level of detail in your presentation. You may not have to start at "ground zero".
- Determine a schedule for the training. Can it be completed in one session, or does it have to be done over several days or weeks?
- Prior to starting, make sure all equipment, machinery, tools, etc. are in good working order. Don't use equipment or tools that are damaged or broken. This sets a standard that the worker finds it acceptable to use substandard equipment.

- Ensure that the work area is clean and everything is in its place. It is important that a new employee recognize the standard of housekeeping that is expected.

- Ensure your demonstration of the job is done safely and efficiently. Refer to the JSA often as a guide for the worker.

Now that the supervisor is prepared, it is time to instruct the worker. One of the most often used techniques for job instruction involves a four-step approach. These steps include:

1. Worker preparation.
2. Supervisor demonstrates the operation.
3. Worker performs the operation.
4. Check trainee progress.

If a job at the NHMFL requires a worker to operate a piece of equipment, the Job Safety Training for the worker must include a demonstration of competence with that specific piece of equipment.

BENEFITS OF JOB SAFETY TRAINING

The effort expended on Job Safety Training will pay dividends. The benefits of such training extend to safety and production. These benefits include:

- Reductions in the frequency and severity of on the job injuries.

- Reductions in the frequency and severity of property damage.

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- More efficient use of time in completing a job.
- Reductions in the amount of materials damaged or requiring rework.
- Improvements in the quality of the finished product.

SECTION OBJECTIVES

At the completion of this section, the supervisor should be able to:

- Identify where accident records and General Safety Training records are kept at the NHMFL.
- Identify the records or documents which are kept on file with the supervisor.

Supervisors are required to generate records and documents pertaining to health and safety issues. These records can include accident investigation documents, JSAs, PJOs, Job Safety Training, medical authorizations, and worker's compensation documents.

Documentation required for accident investigations is discussed in Section 3. These documents are kept on file in the NHMFL Safety Department.

Documentation of General Safety Training is kept by the NHMFL Safety Department. Retrieval of this information is critical in the event of an inspection by a governmental agency or laboratory oversight committee. Training records may also serve as evidence in litigation related to injuries or property damage.

JSAs, PJOs, and Job Safety Training records are kept by the supervisor in their work area files. Although these records may not be required by a specific governmental regulation or standard, they may be used as supporting evidence in an

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accident investigation, inspection, or litigation. Maintaining these documents provides a supervisor with evidence that they did analyze the jobs in their work areas for hazards, evaluated the hazards, and established safe work procedures and training to address the hazards.

SECTION OVERVIEW

At the completion of this section, the supervisor will be able to:

- Describe the key message associated with each of the seven previous sections.

This program has covered those topics necessary for the safe supervision of workers at the NHMFL. The information and techniques presented in this program will only be of benefit if they are implemented and followed through to completion. A periodic evaluation of the supervisor's safety performance will provide a gauge for measuring the success of the EHS program.

During this training course, we looked at the EHS program at the laboratory and its impact on the mission of the laboratory. Supervisor's safety responsibilities were discussed including implementation of the EHS Program, enforcement of EHS policies, providing Job Safety Training, and ensuring staff follow safe work practices. Another key aspect of safety for supervisors is their awareness of hazards.

Accidents were discussed by looking at the causes of accidents, how to prevent accidents, and the control of accidents. We learned that the Job Safety Analysis process can be used to identify hazards associated with a specific task and the appropriate controls. The Planned Job Observation is a method of observing the worker to validate the information contained in the Job Safety Analysis.

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COURSE SUMMARY

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This training course also addressed the importance of communication in the success of the EHS Program and the role played by the supervisor in communicating the necessary components of the program. We learned there can be barriers to successful communication in the workplace.

Maintaining and promoting safety is a critical component to every supervisor's job. This component determines whether there has been long term "buy in" of the EHS Program by the workers, and ultimately determines if the EHS Program has been successful in the supervisor's work area.

Each supervisor has a responsibility to provide Job Safety Training for personnel in their work area. The training needs to be appropriate to the type and level of work being performed, and the degree of hazard associated with the job. Both the supervisor and the worker benefit from Job Safety Training by reductions in the frequency and severity of on the job injuries and property damage.

Finally, supervisors must be aware that recordkeeping and document maintenance are important to the success of the EHS program and the supervisor's performance.

The NHMFL is the preeminent user facility for magnet research and has set the same objective for its EHS Program. The success of the EHS Program depends on every person working at the laboratory. As supervisors, we have a unique opportunity to influence safety in our work areas in a positive manner. The NHMFL management team has sponsored this training in an effort to provide you with the skills necessary to implement an effective EHS Program in your work area.